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10/521,722	01/18/2005	Sybille Buchwald-Werner	C 2703 PCT/US	2264

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EXAMINER	
CLARK, SARA E	
ART UNIT	PAPER NUMBER
4121	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/521,722	BUCHWALD-WERNER, SYBILLE	
	Examiner	Art Unit	
	SARA E. CLARK	4121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11,16-22 and 27-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11,16-22 and 27-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/18/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is a Request for Continued Examination of a 35 U.S.C. 371 (national stage) application of PCT/EP03/07457, filed 7/10/2003, which claims foreign priority to German application 10232774.2, filed 7/18/2002. Claims 11, 16-22, and 27-30, as amended, are pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/4/2009 has been entered.

Previous Actions

2. All rejections made in the Final Office Action dated 9/4/2008 have been withdrawn; therefore, Applicant's arguments submitted in the amendment filed on 2/4/2009 are moot and not considered.

Claim Rejections - 35 USC § 112 First Paragraph

Written Description

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 11, 16-22, and 27-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, although the specification lists a defined set of glycyrrhetic acid salts and esters (pp. 3-4), they are not identified as "derivatives," such that the term as recited in the claims is ambiguous with no clear boundaries. Further, the specification identifies a few of these salts and esters as "preferably used as component (b)" without identifying component (a).

The purpose of the written description requirement is to ensure that the inventor had possession of the specific subject matter claimed as of the filing date of the application. As recognized in the MPEP:

> "To fulfill the written description requirement, a patent specification must describe an invention and do so in sufficient detail that one skilled in the art can clearly conclude that the inventor invented the claimed invention." *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997); *In re Gostelli*, 872 F.2d 1008, 1012, 10 USPQ2d 1614, 1618 (Fed. Cir. 1989) ("[T]he description must clearly allow persons of ordinary skill in the art to recognize that [the inventor] invented what is claimed"). Thus, an applicant complies with the written description requirement "by describing the invention, with all its claimed limitations, not that which makes it obvious," and by using "such descriptive means as words, structures, figures, diagrams, formulas, etc., that set forth the claimed invention." *Lockwood*, 107 F.3d at 1572, 41 USPQ2d at 1966." *Regents of the University of California v. Eli Lilly & Co.*, 43 USPQ2d 1398.

Further, for a broad generic claim, the specification must provide adequate written description to identify the genus of the claim. In *Regents of the University of California v. Eli Lilly & Co.* the court stated:

> "A written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as by structure, formula, [or] chemical name,' of the claimed subject matter sufficient to distinguish it from other materials." *Fiers*, 984 F.2d at 1171, 25 USPQ2d 1601; *In re Smythe*, 480 F.2d 1376, 1383, 178 USPQ 279, 284985 (CCPA 1973) ("In other cases, particularly but not necessarily, chemical cases, where there is unpredictability in performance of certain species or subcombinations other than those specifically enumerated, one skilled in the art may be found not to have been placed in possession of a genus ...") *Regents of the University of California v. Eli Lilly & Co.*, 43 USPQ2d 1398.

MPEP § 2163 recognizes that, for a generic claim, the genus can be adequately described if the disclosure presents a sufficient number of representative species that encompass the genus. If the genus has a substantial variance, the disclosure must describe a sufficient variety of species to reflect the variation within that genus. Although MPEP § 2163 does not define what constitutes a sufficient number of representative species, the courts have indicated what do not constitute a representative number of species to adequately describe a broad genus. In *Gostelli*, the courts determined that the disclosure of two chemical compounds within a subgenus did not describe that subgenus. *In re Gostelli*, 872, F.2d at 1012, 10 USPQ2d at 1618.

MPEP § 2163 also lists factors that can be used to determine if sufficient evidence of possession has been furnished in the disclosure. These include the level of skill and knowledge in the art, partial structure, physical and/or chemical

properties, functional characteristics alone or coupled with a known or disclosed correlation between structure and function, and the method of making the claimed invention. Disclosure of any combination of such identifying characteristics that distinguish the claimed invention from other materials and would lead one of skill in the art to the conclusion that the applicant was in possession of the claimed species is sufficient." While all of the factors have been considered, those sufficient for a *prima facie* case are discussed below.

In the instant case, the claims are drawn to derivatives of glycyrrhetic acid.

(A) Partial structure:

Glycyrrhetic acid has an unsaturated four-ring steroid nucleus with a fifth ring, containing a carboxylic acid moiety, fused to the six-atom D ring, with a C_{12}-C_{13} unsaturation, a C_{11} ketone group, and a C_3 hydroxyl group.

(B) Physical and/or chemical properties and functional characteristics:

Salts and esters would be expected to form primarily at the "E ring" carboxylic acid group, although they are also possible at the C_3 hydroxyl group. The diverse array of salts and esters described in the specification, however – ranging from simple salts like sodium glycyrrhetate to PEG esters that double its molecular weight -- could not all reasonably be presumed to possess identical antibacterial properties in the claimed compositions.

(C) Method of making the claimed invention:

The specification lists thirty possible formulations containing glycyrrhetic acid zinc salt (Table 1, pp. 35-37), but none of these examples contain any other glycyrrhetic acid salts or esters, suggesting that Applicant was not in possession of compositions encompassing the full range of glycyrrhetic acid salts and esters identified on pp. 3-4, and therefore, nor of the nebulous genus "derivatives."

As stated *supra*, the MPEP states that written description for a genus can be achieved by disclosing a representative number of species within a broad generic group. Certainly, claim(s) 11, 16-22, and 27-30 are broad and generic, with respect to all possible compounds encompassed by the claims. The possible structural variations are limitless; nearly anything could be described as a "derivative" of glycyrrhetic acid, such as carbon dioxide. Although the claims may recite some functional characteristics, the claims lack written description because there is no disclosure of a correlation between function and structure of the compounds beyond those compounds specifically disclosed in the examples in the specification. Moreover, the specification lacks sufficient variety of species to reflect this variance in the genus. While having written description of glycyrrhetic acid and compounds identified in the specification tables and/or examples, the specification does not provide sufficient descriptive support for the myriad compounds embraced by the claims.

The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See *In re Wilder*, 736, F.2d 1516, 1521, 222 USPQ 369, 372-73 (Fed.

Cir. 1984) (affirming rejection because the specification does "little more than outlin[e] goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate.") Accordingly, the specification fails to provide adequate written description for the claimed genus and does not reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the entire scope of the claimed invention.

Claim Rejections - 35 USC § 112 Second Paragraph

Indefiniteness

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 11, 16-22, and 27-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The terms "synergistically" and "derivative" in claims 11, 16-22, and 27-30 are relative terms which render the claims indefinite. These terms not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claims 11, 16-22, and 27-30 are indefinite in the recitation of "an amount of benzoyl peroxide effective to synergistically control one or more of the micro-organisms associated with acne" because this "limitation" is relative in nature, which renders the claims indefinite in that the "limitation" is not defined by the

claim and the specification does not provide a standard for ascertaining the requisite degree or endpoints to reasonably apprise one of ordinary skill in the art of the metes and bounds of the invention. For example, the specification does not set forth nor define the metes and bounds nor the nature of dosages nor the effects encompassed by this claimed recitation.

Applicant relies upon the originally filed application for the recitation of the synergistic effect of benzoyl peroxide, but does not provide a sufficient definition nor description of this effect. It is noted that the only description in the specification is a generic statement that "[a] synergistic effect in the control of the microorganisms is observed in particular with benzoyl peroxide" (p. 4, lines 22-23), and one line in Table 1 in which 1% w/w benzoyl peroxide is generically included in ten of thirty example formulations. No working examples or embodiments are described, no data is provided demonstrating the synergistic effect or how it was discovered, and no guidance or direction is given as to how this effect can be measured, such that an ordinary artisan could not be apprised of the metes and bounds of the claimed synergistic effect.

Further, the metes and bounds of the glycyrrhetic acid "derivatives" recited in claims 11, 16-22, and 27-30 are unclear. The specification provides many examples of derivatives, including glycyrrhetic acid salts and esters, but it does not provide a limiting definition. The number of potential derivatives and the nature of the steps required to obtain them have no clear boundary, making the term "derivative" not only overbroad, but intrinsically amorphous. For example, it

is not clear if the glycyrrhetic acid derivatives have to be functional, or how dramatically the structure could be altered and still be regarded as a derivative.

Therefore, these recitations are indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 11, 20, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Le Foyer de Costil et al. (US Pat. 4,545,990, issued 10/8/1985, equivalent to German patent 3341979 to Ayache et al., published 5/24/1984, as provided by Applicant on the IDS dated 1/18/2005).

Le Foyer de Costil et al. teach a composition for the treatment of acne comprising 0.1-3% (w/w) glycyrrhetinic acid and from 1-20% (w/w) benzoyl peroxide, having synergistic and complementary antibacterial effects in the treatment of acne (col. 1, lines 29-58 and col. 2, lines 30-33), which reads on claims 11 and 20. Le Foyer de Costil et al. also teach a method of using this composition to treat acne, by applying it to acne lesions at least once a day for two to four weeks (col. 3, lines 63-68); it is inherent that the acne lesions to be treated are located on a person in need thereof. This method reads on claim 22.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 11, 16, 17, 21, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Foyer de Costil et al. (cited above), in view of Fotinos (US Pat. 5,976,565, issued 11/2/1999).

12. As discussed above, Le Foyer de Costil et al. teach a composition comprising 0.1-3% (w/w) glycyrrhetinic acid and 1-20% (w/w) benzoyl peroxide, the combination of which has synergistic effects against bacteria in the treatment of acne, as well as methods of using the composition in the treatment of acne. However, Le Foyer de Costil et al. do not teach this composition with an additional antibacterial or antibiotic component.

Fotinos teaches compositions for the treatment of acne comprising 0.1-10% w/w benzoyl peroxide, 0.01-5.0% w/w glycyrrhetinic acid, and 0.05-2.0% w/w resorcinol (col. 5, line 51 – col. 6, line 20); in other words, a composition containing the same components of Le Foyer de Costil et al., plus 0.05-2.0% w/w resorcinol as an antiseptic, which reads on claims 11, 16, 17, and 21. Fotinos also teaches methods of using this composition to treat acne, which reads on claims 27 and 28. As recognized by MPEP §2144.06, "[i]t is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful

for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

13. Claims 18 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Foyer de Costil et al. and Fotinos as applied to claims 11, 16, 17, 21, 27, and 28 above, and further in view of Rubiralta et al. (ES 2137125., published 12/1/1999, provided by Applicant on the IDS dated 1/18/2005).

Le Foyer de Costil et al. and Fotinos teach the use of glycyrrhetinic acid in compositions and methods for the treatment of acne, as an anti-irritant (Le Foyer de Costil et al., col. 1, lines 59-65; Fotinos, col. 5, lines 65-67).

A composition containing 0.01-5.0% w/w glycyrrhetinic acid and 0.05-2.0% w/w resorcinol, would satisfy the weight ratio range (10:90 to 90:10) recited by claims 18 and 29. However, Le Foyer de Costil et al. and Fotinos do not specifically teach the zinc salt of glycyrrhetinic acid.

Rubiralta et al. disclose compositions for the treatment of acne consisting of the zinc salt of glycyrrhizic acid, which is present in the compositions from 0.1-5% (claim 3). MPEP 2144.06 recognizes that

> [i]t is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980).

Therefore, using the salt of a compound, as taught by Rubiralta et al., rather than its non-ionized form, as taught by Le Foyer de Costil et al. and Fotinos, for the same purpose in the same composition for the treatment of the same condition would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

14. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Foyer de Costil et al. and Fotinos as applied to claims 11, 16, 17, 21, 27, and 28 above, and further in view of Schaefer (US. Pat. 5,292,512, issued 3/8/1994).

Le Foyer de Costil et al. and Fotinos do not teach micro-encapsulation of composition for treating acne.

Schaefer et al. disclose micro-encapsulation of agents for treating acne such as benzoyl peroxide (col. 3, line 54, and examples 2, and 12-14), in microspheres which enter sebaceous follicles and deliver the composition to the target regions (col. 1, lines 60-61 and col. 2, lines 31-34). As Applicants note in the specification (p. 6), microencapsulation of cosmetic and therapeutic agents is well-known in the art as a method of enhancing topical delivery. Therefore, combining a composition for treating acne with multiple therapeutic components, as taught by Le Foyer de Costil et al. and Fotinos, with the microcapsules of Schaefer et al., would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

15. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Foyer de Costil et al., Fotinos, and Rubiralta et al., as applied to claims 18

and 29 above, and further in view of Schaefer (US. Pat. 5,292,512, issued 3/8/1994).

16. Le Foyer de Costil et al., Fotinos, and Rubiralta et al. do not teach micro-encapsulation of composition for treating acne.

Schaefer et al. disclose micro-encapsulation of agents for treating acne such as benzoyl peroxide (col. 3, line 54, and examples 2, and 12-14), in microspheres which enter sebaceous follicles and deliver the composition to the target regions (col. 1, lines 60-61 and col. 2, lines 31-34). As Applicants note in the specification (p. 6), microencapsulation of cosmetic and therapeutic agents is well-known in the art as a method of enhancing topical delivery. Therefore, combining a composition for treating acne with multiple therapeutic components, as taught by Le Foyer de Costil et al., Fotinos, and Rubiralta et al., with the microcapsules of Schaefer et al., would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARA E. CLARK whose telephone number is (571) 270-7672. The examiner can normally be reached on Monday - Thursday, 7:30 am - 5:00 pm (EST). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Nolan can be reached on 571-272-0847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SEC

/Patrick J. Nolan/
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